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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/987,775	12/09/1997	ACHIM GREFENSTEIN	47587/48070	6702

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EXAMINER	
KRUER, KEVIN R	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 08/987,775	Applicant(s) GREFENSTEIN ET AL.	
	Examiner KEVIN R. KRUER	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24,26,30,31,34,41 and 43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24,26,30,31,34,41 and 43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 6, 2008 has been entered.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 24, 31, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,747,568) in view of (a) WO96/09928 (aka Sallmetall), (b) Rosenau et al. (US 5,821,302) and (c) Nishihara (US 5,900,446) or Margotte et al (US 4,204,047).

Fischer teaches a molding material comprising 30-80wt% of an elastomeric grafting base and 20-70wt% of a shell grafted onto the grafting base (abstract). The grafting base comprises 90-99.9% of at least one alkyl acrylate and 0.1-10wt% of a polyfunctional crosslinking monomer. The shell comprises 0-100% styrene or substituted styrenes, and 0-100% of an acrylonitrile or methyl methacrylate. The above-described particles are dispersed in a hard matrix comprising 60-90wt% styrene or substituted styrene and 10-40% acrylonitrile (col 1, lines 48-col2, line 16). The

composition may further contain up to 30t% of additives such as fibers (Col 4, lines 26-34). This composition exhibit good weather resistance, aging resistance, and high impact strength (col 4, lines 46-53), and are usable as signs (col 4, line 48).

Fischer does not teach that the molding material may be overlaid with a PMMA transparent layer and a transparent protective film. However, Sallmetall teaches a light transmitting cover foil intended for adhesion to an information-carrying surface (page 1, lines 1-5). The first layer of the cover foil comprises a deformable plastic (abstract). The examiner interprets the taught deformable plastic layer to read on the claimed transparent protective film of claim 41 because it will inherently provide the film with some layer of protection. The deformable plastic layer may be textured or patterned if desired (page 1, lines 30+). The cover foil further comprises a dimensionally stable carrier layer comprising, for instance, PMMA (abstract). The examiner notes that the taught dimensionally stable carrier layer reads on Applicant's claimed "transparent top layer of PMMA." A thermally activated hot melt layer comprising EVA, EEA, EBA, EMA, GBA or other low melting thermoplastics may be utilized to adhere the deformable plastic to the carrier sheet (abstract). The layers may be mutually connected via coextrusion (page 2, lines 14-16). It would have been obvious to one of ordinary skill in the art to utilize the cover film taught in Sallmetall on the sign taught in Fischer in order to protect the sign and provide the sign with the desired texturing and patterning.

Fischer also does not teach that the composition may comprise a polycarbonate. However, Margotte and Nishihara each individually teaches a composition comprising a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the

addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Nishihara teaches a composition comprising a core/shell polymer and10-90pbw of polycarbonate (col 4, lines 30+) with a molecular weight of 10,000-100,000 (col 6, line 56). Said blend has a good combination of processability, impact resistance and rigidity (col 7, lines 45+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in Fischer with 10-90pbw polycarbonate. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

With respect to the "ground or granulated" limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in "granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400°C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

Fischer does not teach the claimed particle size of the graft copolymer. However, Rosenau teaches the particle size of said particles may be selected based

upon the desired glossiness/roughness of the resulting layer (col 3, lines 5+). Thus, it would have been obvious to the skilled artisan to optimize the particle size of the graft polymers taught in Fischer in order to optimize the desired gloss/dullness of the resulting film.

3. Claims 24, 31, 34, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,747,568) in view of (a) Ellison US 5,985,079), (b) Rosenau et al. (US 5,821,302) and (c) Nishihara (US 5,900,446) or Margotte et al (US 4,204,047).

Fischer teaches a molding material comprising 30-80wt% of an elastomeric grafting base and 20-70wt% of a shell grafted onto the grafting base (abstract). The grafting base comprises 90-99.9% of at least one alkyl acrylate and 0.1-10wt% of a polyfunctional crosslinking monomer. The shell comprises 0-100% styrene or substituted styrenes, and 0-100% of an acrylonitrile or methyl methacrylate. The above-described particles are dispersed in a hard matrix comprising 60-90wt% styrene or substituted styrene and 10-40% acrylonitrile (col 1, lines 48-col2, line 16). The composition may further contain up to 30t% of additives such as fibers (Col 4, lines 26-34). This composition exhibit good weather resistance, aging resistance, and high impact strength (col 4, lines 46-53), and are usable as automobile parts (col 4, line 48).

Fischer does not teach the application of transparent surface coatings to the taught composition. However, Ellison teaches a flexible composite surfacing film for providing a substrate with desired surface characteristics. The film comprises a flexible transparent outer polymer clear coat layer and a pigmented base coat layer is adhered

to said outer clear coat layer and is visible there through (abstract). The transparent outer polymer clear coat layer may comprise outer and inner layers of differing properties. For example, both layers may comprise a blend of fluorinated polymer and an acrylic resin. However, the outer layer may be rich in the fluorinated polymer to enhance weatherability, and the inner layer may be rich in acrylic resin to improve bonding to the pigmented layer (col 7, lines 15-37). The acrylic resin may be polymethyl methacrylate homopolymers (col 6, lines 24-42). Both polymers may be extruded from the same extrusion die (col 7, line 40). The pigmented polymer may also be extruded (col 8, line 35). The surfacing film may be applied to polymeric supporting substrates in accordance with known laminating or bonding techniques. Particularly suitable shaped articles of the invention are exterior automobile parts (col 11, line 36). Thus, it would have been obvious to one of ordinary skill in the art to apply the surfacing film taught in Ellison to the composition taught in Fischer in order to supply the composition with the desired surface characteristics.

Fischer also does not teach that the composition may comprise a polycarbonate. However, Margotte and Nishihara each individually teaches a composition comprising a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Nishihara teaches a composition comprising a core/shell polymer and10-90pbw of polycarbonate (col 4, lines 30+) with a molecular

weight of 10,000-100,000 (col 6, line 56). Said blend has a good combination of processability, impact resistance and rigidity (col 7, lines 45+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in Fischer with 10-90pbw polycarbonate. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

With respect to the "ground or granulated" limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in "granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400°C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

Fischer does not teach the claimed particle size of the graft copolymer. However, Rosenau teaches the particle size of said particles may be selected based upon the desired glossiness/roughness of the resulting layer (col 3, lines 5+). Thus, it would have been obvious to the skilled artisan to optimize the particle size of the graft polymers taught in Fischer in order to optimize the desired gloss/dullness of the resulting film.

4. Claims 24, 31, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau et al. (US 5,821,302) in view of (a) Ellison (US 5,985,079) and (b) Margotte et al (US 4,204,047).

Rosenau teaches a thermoplastic molding composition comprising (a) 50-100wt% of a styrene compound, and (b) 0.1-70wt% of a graft polymer. The styrene compound may comprise 0-40wt% acrylonitrile. The graft polymer comprises 30-90wt% of a core, and 10-70wt% of a graft shell. The core comprises 50-99.99wt% of C1-10 alkyl acrylate, and 0.01-5wt% of a polyfunctional crosslinking monomer. The shell comprises 50-100wt% styrene and 0-40wt% acrylonitrile (col 1, lines 4-65). The graft polymer has an average particle diameter of less than 700nm. The composition may further comprise up to 70wt% of a particulate polymer and up to 70wt% of a polycarbonate blend (col 9, lines 59+). The composition is useful in extrusions, injection moldings, calendaring, and rolling (col 10, lines 58-64).

Rosenau teaches the composition may comprise polycarbonate but does not teach the claimed molecular weight of said polycarbonate. However, Margotte teaches a composition comprising an impact resistance of a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in

Rosenau with polycarbonate having a molecular weight o 20,000-80,000. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

Rosenau does not teach the claimed top coat or protective coat may be applied to the taught composition. However, Ellison teaches a flexible composite surfacing film for providing a substrate with desired surface characteristics. The film comprises a flexible transparent outer polymer clear coat layer and a pigmented base coat layer is adhered to said outer clear coat layer and is visible there through (abstract). The transparent outer polymer clear coat layer may comprise outer and inner layers of differing properties. For example, both layers may comprise a blend of fluorinated polymer and an acrylic resin. However, the outer layer may be rich in the fluorinated polymer to enhance weatherability, and the inner layer may be rich in acrylic resin to improve bonding to the pigmented layer (col 7, lines 15-37). The acrylic resin may be polymethyl methacrylate homopolymers (col 6, lines 24-42). Both polymers may be extruded from the same extrusion die (col 7, line 40). The pigmented polymer may also be extruded (col 8, line 35). The surfacing film may be applied to polymeric supporting substrates in accordance with known laminating or bonding techniques. Particularly suitable shaped articles of the invention are exterior automobile parts (col 11, line 36). Thus, it would have been obvious to one of ordinary skill in the art to apply the surfacing film taught in Ellison to the composition taught in Rosenau in order to supply the composition with the desired surface characteristics.

With respect to the “ground or granulated” limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in “granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400°C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

5. Claims 24 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau et al. (US 5,821,302) in view of (a) Trabert et al. (US 5,318,737) and (b) Margotte et al (US 4,204,047).

Rosenau teaches a thermoplastic molding composition comprising (a) 50-100wt% of a styrene compound, and (b) 0.1-70wt% of a graft polymer. The styrene compound may comprise 0-40wt% acrylonitrile. The graft polymer comprises 30-90wt% of a core, and 10-70wt% of a graft shell. The core comprises 50-99.99wt% of C1-10 alkyl acrylate, and 0.01-5wt% of a polyfunctional crosslinking monomer. The shell comprises 50-100wt% styrene and 0-40wt% acrylonitrile (col 1, lines 4-65). The graft polymer has an average particle diameter of less than 700nm. The composition may further comprise up to 70wt% of a particulate polymer and up to 70wt% of a polycarbonate component (col 9, lines 59+). The composition is useful in extrusions,

injection moldings, calendaring, and rolling (col 10, lines 58-64), and may be utilized to make automotive parts.

Rosenau does not teach that a transparent PMMA coating should be applied over the taught composition. However, Trabert teaches a capstock composition comprising an acrylic polymer and an acrylic based impact-modifying agent (abstract). The acrylic resin may comprise polymerized methyl methacrylate (col 6, line 16). The composition has particularly good flexural modulus and impact strength (col 5, line 27), scratch resistance, thermal resistance, and chemical resistance. Such resin compositions can be extruded onto the desired substrate (col 5, lines 29+) or coextruded with the substrate (col 5, lines 48+). The capstocks are especially useful with structural plastics (col 9, lines 1+). It would have been obvious to one of ordinary skill in the art to coextrude the capstock taught in Trabert with the composition taught in Rosenau in order to improve its chemical resistance, and impact strength.

Rosenau teaches the composition may comprise polycarbonate but does not teach the claimed molecular weight of said polycarbonate. However, Margotte teaches a composition comprising an impact resistance of a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in

Rosenau with polycarbonate having a molecular weight o 20,000-80,000. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

With respect to the "ground or granulated" limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in "granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400°C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

6. Claims 24, 31, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau et al. (US 5,821,302) in view of (a) EP006421 (aka Endoh) and (b) Margotte et al (US 4,204,047).

Rosenau teaches a thermoplastic molding composition comprising (a) 50-100wt% of a styrene compound, and (b) 0.1-70wt% of a graft polymer. The styrene compound may comprise 0-40wt% acrylonitrile. The graft polymer comprises 30-90wt% of a core, and 10-70wt% of a graft shell. The core comprises 50-99.99wt% of C1-10 alkyl acrylate, and 0.01-5wt% of a polyfunctional crosslinking monomer. The shell comprises 50-100wt% styrene and 0-40wt% acrylonitrile (col 1, lines 4-65). The graft polymer has an

average particle diameter of less than 700nm. The composition may further comprise up to 70wt% of a particulate polymer and up to 70wt% of a polycarbonate blend (col 9, lines 59+). The composition is useful in extrusions, injection moldings, calendaring, and rolling (col 10, lines 58-64).

Rosenau does not teach that a PMMA transparent layer or a protective topcoat may be applied to the taught composition. However, Endoh teaches an extrusion laminate comprising a polyvinylidene fluoride layer, and an adhesive layer comprising a methyl methacrylate polymer (abstract). The methyl methacrylate polymer may comprise PMMA (page 9, lines 14+). The polyvinylidene fluoride layer provides the laminate with excellent weather resistance and chemical resistance. Thus, it would have been obvious to one of ordinary skill in the art to extrude the composition taught in Rosenau with the polyvinylidene fluoride and PMMA layers taught in Endoh in order to improve the composition's weather and chemical resistance.

Rosenau teaches the composition may comprise polycarbonate but does not teach the claimed molecular weight of said polycarbonate. However, Margotte teaches a composition comprising an impact resistance of a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in

Rosenau with polycarbonate having a molecular weight o 20,000-80,000. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

With respect to the "ground or granulated" limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in "granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400°C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

7. Claims 24, 31, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,747,568) in view of (a) EP0060421 (aka Endoh), (b) Rosenau et al. (US 5,821,302) and (c) Nishihara (US 5,900,446) or Margotte et al (US 4,204,047).

Fischer teaches a molding material comprising 30-80wt% of an elastomeric grafting base and 20-70wt% of a shell grafted onto the grafting base (abstract). The grafting base comprises 90-99.9% of at least one alkyl acrylate and 0.1-10wt% of a polyfunctional crosslinking monomer. The shell comprises 0-100% styrene or substituted styrenes, and 0-100% of an acrylonitrile or methyl methacrylate. The above-described particles are dispersed in a hard matrix comprising 60-90wt% styrene or

substituted styrene and 10-40% acrylonitrile (col 1, lines 48-col2, line 16). The composition may further contain up to 30t% of additives such as fibers (Col 4, lines 26-34). This composition exhibit good weather resistance, aging resistance, and high impact strength (col 4, lines 46-53), and are usable as signs (col 4, line 48).

Fischer does not teach that a PMMA transparent layer or a protective topcoat may be applied to the taught composition. However, Endoh teaches an extrusion laminate comprising a polyvinylidene fluoride layer, and an adhesive layer comprising a methyl methacrylate polymer (abstract). The methyl methacrylate polymer may comprise PMMA (page 9, lines 14+). The polyvinylidene fluoride layer provides the laminate with excellent weather resistance and chemical resistance. Thus, it would have been obvious to one of ordinary skill in the art to extrude the composition taught in Fischer with the polyvinylidene fluoride and PMMA layers taught in Endoh in order to improve the composition's weather and chemical resistance.

Fischer also does not teach that the composition may comprise a polycarbonate. However, Margotte and Nishihara each individually teaches a composition comprising a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Nishihara teaches a composition comprising a core/shell polymer and10-90pbw of polycarbonate (col 4, lines 30+) with a molecular weight of 10,000-100,000 (col 6, line 56). Said blend has a good combination of

processability, impact resistance and rigidity (col 7, lines 45+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in Fischer with 10-90pbw polycarbonate. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

With respect to the "ground or granulated" limitation, the examiner takes the position said limitation is a method limitation. Specifically, the specification teaches that the polycarbonate is added in "granulated or ground" form (page 18-page 19) and then mixed with the other components at 180-400^{o}C (page 21, lines 26+). At those processing temperatures, the polycarbonate will melt and will not maintain its granulated or ground form (polycarbonate is herein understood to typically melt at 374-500°F). Thus, the method in which the polycarbonate is supplied to the composition is herein understood not to materially affect the final product. No showing has been made that the form in which the polycarbonate is supplied affects the final product.

Fischer does not teach the claimed particle size of the graft copolymer. However, Rosenau teaches the particle size of said particles may be selected based upon the desired glossiness/roughness of the resulting layer (col 3, lines 5+). Thus, it would have been obvious to the skilled artisan to optimize the particle size of the graft polymers taught in Fischer in order to optimize the desired gloss/dullness of the resulting film.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over (a) Fischer et al. (US 5,747,568) in view of WO96/09928 (aka Sallmetall), Rosenau, and

Margotte or Nishihara, (b) Fischer et al. (US 5,747,568) in view of Ellison US 5,985,079), Rosenau, and Margotte or Nishihara, (c) Rosenau et al. (US 5,821,302) in view of Ellison (US 5,985,079) and Margotte, (d) Rosenau et al. (US 5,821,302) in view of Trabert et al. (US 5,318,737) and Margotte, (e) Rosenau et al. (US 5,821,302) in view of EP0060421 (aka Endoh) and Margotte, or (f) Fischer et al. (US 5,747,568) in view of EP0060421 (aka Endoh), Rosenau, and Margotte or Nishihara, as applied above, and further in view of Tsai et al. (US 5,858,550).

Fischer in view of Sallmetall, Fischer in view of Ellison, Rosenau in view of Trabert, Rosenau in view of Endoh, Fischer in view of Endoh, and Rosenau in view of Ellison are relied upon as above. However, none of the references teach that the ratio of MFI values of the individual components of the laminated sheet is not more than 3:1. However, Tsai teaches that the constituents used to form a coextruded sheet should have melt properties that are substantially similar to one another (col 7, lines 51+). Thus, it would have been obvious to one of ordinary skill in the art to utilize resins that have MFI values substantially similar to one another so that the films can be effectively coextruded.

9. Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over (a) Fischer et al. (US 5,747,568) in view of WO96/09928 (aka Sallmetall), Rosenau, and Margotte or Nishihara, (b) Fischer et al. (US 5,747,568) in view of Ellison US 5,985,079), Rosenau, and Margotte or Nishihara, (c) Rosenau et al. (US 5,821,302) in view of Ellison (US 5,985,079) and Margotte, (d) Rosenau et al. (US 5,821,302) in view of Trabert et al. (US 5,318,737) and Margotte, (e) Rosenau et al. (US 5,821,302) in

view of EP0060421 (aka Endoh) and Margotte, or (f) Fischer et al. (US 5,747,568) in view of EP0060421 (aka Endoh), Rosenau, and Margotte or Nishihara, as applied above.

Fischer in view of Sallmetall, Fischer in view of Ellison, Rosenau in view of Trabert, Rosenau in view of Endoh, Fischer in view of Endoh, and Rosenau in view of Ellison are relied upon as above. None of the references teaches the desired thickness of the laminate. However, Rosenau and Fischer each teach rigid compositions with enhanced impact resistance. Furthermore, Ellison, Trabert, Sallmetall, and Endoh each teach the application of protective layers to such substrates. Thus, it would have been obvious to one of ordinary skill in the art to vary the thickness of the laminate so that the laminate has the desired rigidity, impact resistance, and weather resistance for the intended end use. Furthermore, it would have been obvious to one of ordinary skill in the art to vary the thickness of the substrate composition in order to obtain the desired rigidity and impact resistance in the final product.

10. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,747,568) in view of (a) Zabrocki et al (US 5,306,548) or McDonagh (US 4,169,180), (b) Rosenau, and (c) Nishihara (US 5,900,446) or Margotte et al (US 4,204,047).

Fischer teaches a molding material comprising 30-80wt% of an elastomeric grafting base and 20-70wt% of a shell grafted onto the grafting base (abstract). The grafting base comprises 90-99.9% of at least one alkyl acrylate and 0.1-10wt% of a polyfunctional crosslinking monomer. The shell comprises 0-100% styrene or

substituted styrenes, and 0-100% of an acrylonitrile or methyl methacrylate. The above-described particles are dispersed in a hard matrix comprising 60-90wt% styrene or substituted styrene and 10-40% acrylonitrile (col 1, lines 48-col2, line 16). The composition may further contain up to 30t% of additives such as fibers (Col 4, lines 26-34). This composition exhibit good weather resistance, aging resistance, and high impact strength (col 4, lines 46-53), and are usable as signs (col 4, line 48).

Fischer does not teach that a styrene-acrylonitrile copolymer layer may be applied to the taught composition. However, Zabrocki teaches a weatherable film for lamination to an underlying substrate. The film comprises an outer layer of weather resistant polymer comprising styrene/acrylonitrile copolymer or butyl acrylate-reinforced styrene/acrylonitrile copolymer (abstract). The film can be utilized with high impact polystyrene substrates (see example 1). NOTE: the composition taught in Fischer is a HIPS composition. For a definition of a HIPS, Applicant's attention is directed to US 4,749,737 (see col 5, lines 27+). Thus, it would have been obvious to one of ordinary skill in the art to apply the styrene-acrylonitrile weatherable film taught in Zabrocki to the composition taught in Fischer in order to improve said composition's weather resistance.

Similarly, McDonagh teaches a protective layer comprising methacrylate/crosslinked styrene-acrylonitrile/uncrosslinked styrene-acrylonitrile (abstract). Said composition is applied to base layers that lack superior weather resistance (abstract). Thus, it would have been obvious to one of ordinary skill in the art

to apply the protective layer taught in McDonagh to the composition taught in Fischer in order to improve its weather resistance.

Fischer also does not teach that the composition may comprise a polycarbonate. However, Margotte and Nishihara each individually teaches a composition comprising a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Nishihara teaches a composition comprising a core/shell polymer and10-90pbw of polycarbonate (col 4, lines 30+) with a molecular weight of 10,000-100,000 (col 6, line 56). Said blend has a good combination of processability, impact resistance and rigidity (col 7, lines 45+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in Fischer with 10-90pbw polycarbonate. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

Fischer does not teach the claimed particle size of the graft copolymer. However, Rosenau teaches the particle size of said particles may be selected based upon the desired glossiness/roughness of the resulting layer (col 3, lines 5+). Thus, it would have been obvious to the skilled artisan to optimize the particle size of the graft polymers taught in Fischer in order to optimize the desired gloss/dullness of the resulting film.

11. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau et al. (US 5,821,302) in view of (a) Zabrocki et al (US 5,306,548) or McDonagh (US 4,169,180) and (b) Margotte (US 4,204,047)

Rosenau teaches a thermoplastic molding composition comprising (a) 50-100wt% of a styrene compound, and (b) 0.1-70wt% of a graft polymer. The styrene compound may comprise 0-40wt% acrylonitrile. The graft polymer comprises 30-90wt% of a core, and 10-70wt% of a graft shell. The core comprises 50-99.99wt% of C1-10 alkyl acrylate, and 0.01-5wt% of a polyfunctional crosslinking monomer. The shell comprises 50-100wt% styrene and 0-40wt% acrylonitrile (col 1, lines 4-65). The graft polymer has an average particle diameter of less than 700nm. The composition may further comprise up to 70wt% of a particulate polymer and up to 70wt% of a polycarbonate blend (col 9, lines 59+). The composition is useful in extrusions, injection moldings, calendaring, and rolling (col 10, lines 58-64), and may be utilized to make automotive parts.

Rosenau does not teach that a styrene-acrylonitrile copolymer layer may be applied to the taught composition. However, Zabrocki teaches a weatherable film for lamination to an underlying substrate. The film comprises an outer layer of weather resistant polymer comprising styrene/acrylonitrile copolymer or butyl acrylate-reinforced styrene/acrylonitrile copolymer (abstract). The film can be utilized with high impact polystyrene substrates (see example 1). NOTE: the composition taught in Rosenau is a HIPS composition. For a definition of a HIPS, Applicant's attention is directed to US 4,749,737 (see col 5, lines 27+). Thus, it would have been obvious to one of ordinary

skill in the art to apply the styrene-acrylonitrile weatherable film taught in Zabrocki to the composition taught in Rosenau in order to improve said composition's weather resistance.

Similarly, McDonagh teaches a protective layer comprising methacrylate/crosslinked styrene-acrylonitrile/uncrosslinked styrene-acrylonitrile (abstract). Said composition is applied to base layers that lack superior weather resistance (abstract). Thus, it would have been obvious to one of ordinary skill in the art to apply the protective layer taught in McDonagh to the composition taught in Rosenau in order to improve its weather resistance.

Rosenau teaches the composition may comprise polycarbonate but does not teach the claimed molecular weight of said polycarbonate. However, Margotte teaches a composition comprising an impact resistance of a core/shell graft copolymer compounded with polycarbonate. Margotte teaches the addition of 20-80pbw polycarbonate to said mixture (abstract). The polycarbonate should have a molecular weight of 20,000-80,000 (col 4, lines 1+) and is granulated (col 6, lines 1+). Said mixture has the benefit of improved strength, dimensional stability, and processability (col 2, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compound the core/shell graft copolymer taught in Rosenau with polycarbonate having a molecular weight o 20,000-80,000. The motivation for doing so would have been to improve the composition's processability, high impact resistance, and rigidity.

Response to Arguments

Applicant's arguments have been fully considered but they are not fully persuasive. Applicant's arguments were fully considered in the Advisory Action of May 28, 2008.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN R. KRUER whose telephone number is (571)272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin R Kruer/
Primary Examiner, Art Unit 1794